



ATTACHMENT B
Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A reconfigurable instrument panel for a vehicle, said panel comprising:

a vehicle instrument panel display including a rear projection display screen;
a plurality of physical control details capable of movement between a plurality of positions and mounted in front of said screen[;], said display screen comprising part of a display system capable of providing, on said screen, different configurable images associated with the plurality of physical control details, said images including at least two of an audio image, a climate control image, and a navigational guidance image and at least one of said physical control details comprising a rotatable control knob;

an electro-optical sensing system, located behind said screen and capable of sensing the plurality of positions of each of said plurality of physical control details and having a field of view which encompasses said plurality of physical control details, for sensing a current position of at least one of said plurality of physical control details based on reflected light; and

a computer, connected to said electro-optical sensing ~~means~~ system, to determine, from the current position of the at least one ~~of said physical control details~~ detail sensed by the electro-optical sensing means, ~~inputs~~ at least one input to control at least one function of the vehicle.

2. (Canceled)

3. (Previously Presented) An instrument panel according to claim 1 wherein said computer controls said display as a result of data inputted to said computer from an external source.

4. (Previously Presented) An instrument panel according to claim 1 wherein said electro-optical sensing system is comprised by a TV camera.
5. (Previously Presented) An instrument panel according to claim 1 wherein said electro-optical sensing system is comprised by an optical sensor incorporated into a projector for the rear projection display.
6. (Previously Presented) An instrument panel according to claim 1 wherein said computer additionally controls a desired function.
7. (Previously Presented) An instrument panel according to claim 1 wherein at least one of said physical control details comprises a knob.
8. (Previously Presented) An instrument panel according to claim 1 wherein absolute position of said at least one physical control detail is determined.
9. (Previously Presented) An instrument panel according to claim 1 further including sensing of touch position on said screen.
10. (Previously Presented) An instrument panel according to claim 9 wherein said touch sensing is also achieved electro-optically.
11. (Canceled)
12. (Previously Presented) An instrument panel according to claim 1 wherein a datum on said at least one physical control detail located on the users side of said screen is sensed.
13. (Previously Presented) An instrument panel according to claim 1 wherein a datum on a member related to the current position of said at least one physical control

detail is sensed by said electro-optical sensing means, said member being located in back of said screen.

14. (Previously Presented) An instrument panel according to claim 1 wherein force feedback is provided to the user as a result of sensing the current position of said at least one physical control detail or touch position.

15. (Canceled)

16. (Previously Presented) An instrument panel according to claim 1 wherein said screen incorporates at least one relief feature.

17. (Previously Presented) An instrument panel according to claim 16 wherein said relief feature does not unduly disrupt images projected on said screen.

18. (Previously Presented) An instrument panel according to claim 1 wherein at least one of said plurality of physical control details comprises a transparent portion.

19. (Previously Presented) An instrument panel according to claim 1 wherein at least one of said physical control details includes an opening through which said screen may be viewed.

20. (Previously Presented) An instrument panel according to claim 1 wherein at least one of said physical control details comprises one of a slider and a dial.

21. (Previously Presented) An instrument panel according to claim 1 further comprising projection means of a flying spot scanning type.

22. (Previously Presented) An instrument panel according to claim 1 further comprising projection means comprising an image modulating projector.

23. (Previously Presented) An instrument panel according to claim 1 wherein said plurality of physical control details comprises two knobs spaced horizontally in front of said screen.

24. (Previously Presented) An instrument panel according to claim 23 wherein a first displayed image on said screen corresponds to a radio configured around said two knobs, and said first image is capable of being reconfigured to a further image corresponding to another function.

25.-26. (Canceled)

27. (Previously Presented) An instrument panel according to claim 1 wherein the instrument panel comprises a center stack and wherein the screen of said display is located in the center stack and is of a size occupying a substantial portion of the center stack.

28. (Previously Presented) An instrument panel according to claim 1 wherein said screen is curvilinear.

29. (Previously Presented) An instrument panel according to claim 1 wherein said screen is of an irregular non-standard geometrical shape.

30. (Previously Presented) An instrument panel according to claim 1 wherein said display screen has an area of at least ninety square inches.

31. (Previously Presented) An instrument panel according to claim 1 wherein said display screen is located in the center stack of said vehicle and extends toward the steering wheel of said vehicle.

32. (Previously Presented) An instrument panel according to Claim 1 wherein said display screen comprises a plastic screen.

33. (Previously Presented) An instrument panel according to claim 1 wherein video images are displayed on an upper portion of said display screen so as to be easily seen by the driver of said vehicle.

34.-35. (Canceled)

36. (Previously Presented) An instrument panel according to claim 1 wherein said display screen is easily interchanged with a further display screen.

37.-39. (Canceled)

40. (Previously Presented) An instrument panel according to claim 1 wherein data displayed on said display screen is comprised of labels and other data relating to the function of at least one of said plurality of physical control details.

41. (Previously Presented) An instrument panel according to claim 33 wherein a video image is provided on the screen which can be touched at a desired location to acknowledge or confirm data presented.

42.-44. (Canceled)

45. (Previously Presented) An instrument panel according to claim 1 wherein said computer is further used to process data from other electro-optical systems within the vehicle.

46. (Previously Presented) An instrument panel according to claim 9 wherein data to be acted on by touch sensing is projected on said screen under control of said computer.

47-53. (Canceled)

54. (Currently Amended) A method for controlling at least one function of a vehicle, said method comprising:

using an electro-optical sensing means for sensing a current position of at least one of a plurality of physical control details capable of movement between a plurality of positions and located in front of a rear projection screen of a reconfigurable instrument panel display for the vehicle, at least one of said plurality of physical control details comprising a rotatable control knob, and wherein said display screen comprises part of a display system capable of providing, on said display screen, different reconfigurable images associated with the plurality of said control details, said images including at least two of an audio image, a climate control image, and a navigational guidance image, and wherein the electro-optical sensing means is capable of sensing the positions of each of said plurality of physical control details, has a field of view which encompasses each of said plurality of physical control details, and is located behind the screen, wherein the current position of the at least one of said plurality of physical control details is sensed based on reflected light, and wherein said display is controlled by a computer; and

using the computer in processing data from said electro-optical sensing means to determine the current position of the at least one of the plurality of physical control details and ~~in-controlling~~ to control at least one function of the vehicle based on the current position of the at least one of the plurality of physical control details determined by the computer.

55.-57. (Canceled)

58. (Previously Presented) An instrument panel according to claim 1 wherein at least a portion of said screen is non-flat.

59. (Previously Presented) An instrument panel according to claim 1 further comprising touch sensing means for sensing xy touch position of a finger of a user on at least a portion of said display screen.

60. (Previously Presented) An instrument panel according to claim 1 wherein said electro-optical sensing system further senses touch position on said display screen.

61. (Previously Presented) An instrument panel according to claim 1 wherein at least one of said physical control details comprises a switch.

62.-63. (Canceled)

64. (Previously Presented) A method according to claim 54 wherein said computer controls said display as a result of data inputted to said computer from an external source.

65. (Previously Presented) A method according to claim 54 wherein said electro-optical sensing system is comprised by a TV camera.

66. (Previously Presented) A method according to claim 54 wherein said electro-optical sensing system is comprised by an optical sensor incorporated into a projector for the rear projection display.

67. (Previously Presented) A method according to claim 54 wherein said computer additionally controls a desired function.

68. (Previously Presented) A method according to claim 54 wherein at least one of said physical control details comprises a knob.

69. (Previously Presented) A method according to claim 54 wherein absolute position of said at least one physical control detail is determined.

70. (Previously Presented) A method according to claim 54 further including sensing of touch position on said screen.

71. (Previously Presented) A method according to claim 70 wherein said touch sensing is also achieved electro-optically.

72. (Previously Presented) A method according to claim 54 wherein a datum on said at least one physical control detail located on the users side of said display screen is sensed.

73. (Previously Presented) A method according to claim 54 wherein a datum is sensed on a member related to the current position of said at least one physical control detail is located on the projector side of said display screen.

74. (Previously Presented) A method according to claim 54 wherein force feedback is provided to the user as a result of sensing the current position of said at least one physical control detail.

75. (Previously Presented) A method according to claim 54 wherein said display screen incorporates at least one relief feature.

76. (Previously Presented) A method according to claim 75 wherein said relief feature does not unduly disrupt images projected on said display screen.

77. (Previously Presented) A method according to claim 54 wherein said at least one physical control detail comprises a transparent portion.

78. (Previously Presented) A method according to claim 54 wherein said at least one physical control detail includes an opening through which said display screen may be viewed.

79. (Previously Presented) A method according to claim 54 wherein at least one of said physical control details comprises one of a slider and a dial.
80. (Previously Presented) A method according to claim 54 further comprising projection means of a flying spot scanning type.
81. (Previously Presented) A method according to claim 54 further comprising projection means of a image modulating type.
82. (Previously Presented) A method according to claim 54 wherein said plurality of physical control details comprises two knobs spaced horizontally in front of said display screen.
83. (Previously Presented) A method according to claim 54 wherein a first displayed image on said display screen corresponds to a radio configured around said two knobs, and said first image is capable of being reconfigured to a further image corresponding to another function.
84. (Previously Presented) A method according to claim 54 wherein the instrument panel comprises a center stack and wherein the display screen of said display is located in the center stack and is of a size occupying a substantial portion of the center stack.
85. (Previously Presented) A method according to claim 54 wherein said display screen is curvilinear.
86. (Previously Presented) A method according to claim 54 wherein said display screen has an area of at least ninety square inches.

87. (Previously Presented) A method according to claim 54 wherein said display screen is located in the center stack of said vehicle and extends toward the steering wheel of said vehicle.
88. (Previously Presented) A method according to claim 54 wherein said display screen comprises a plastic screen.
89. (Previously Presented) A method according to claim 54 wherein video images are displayed on an upper portion of said display screen so as to be easily seen by the driver of said vehicle.
90. (Previously Presented) A method according to claim 54 wherein said display screen is easily interchanged with a further screen.
91. (Previously Presented) A method according to claim 54 wherein data is displayed on said display screen that is comprised of labels and other data relating to the function of at least one of said plurality of physical control details.
92. (Previously Presented) A method according to claim 54 wherein a video image is provided on the display screen which can be touched at a desired location to acknowledge or confirm data presented.
93. (Previously Presented) A method according to claim 54 wherein said computer is further used to process data from other electro-optical systems within the vehicle.
94. (Previously Presented) A method according to claim 54 wherein data to be acted on by touch is projected on said display screen under control of said computer.
95. (Previously Presented) A method according to claim 54 wherein at least a portion of said display screen is non-flat.

96. (Previously Presented) A method according to claim 54 further comprising using touch sensing means for sensing xy touch position of a finger of a user on at least a portion of said display screen.

97. (Previously Presented) A method according to claim 54 wherein said electro-optical sensing system is used to also sense touch position on said display screen.

98. (Previously Presented) A method according to claim 54 wherein at least one of said physical control details comprises a switch.

99.-100. (Canceled)

101. (New) A configurable instrument panel for controlling functions of a vehicle, said panel comprising:

- a vehicle instrument panel display including a rear projection display screen;
- a plurality of physical control details capable of movement between a plurality of positions and mounted in front of said screen, at least one of said physical control details comprising a rotatable control knob;

- an electro-optical sensing system, located behind said screen and capable of sensing the plurality of positions of each of said plurality of physical control details, and having a field of view which encompasses said plurality of physical control details, for sensing a current position of each of said plurality of physical control details based on reflected light; and

- a computer, connected to said electro-optical sensing means, for reconfiguring the instrument panel from a display on the screen of one vehicle function to a different display on the screen of at least one other vehicle function, and for determining, from a current position of a physical control detail sensed by the electro-optical sensing means, as least one input to control a currently configured function of the vehicle, said vehicle functions and associated displays on said screen being selected from the group consisting of functions and associated displays of an audio system, climate control system and navigation system.